

MagCam Article in MagNews Autumn 2010 Edition

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Company Profile - New UKMAG member MagCam NV, Belgium

MagCam NV offers newest measurement technology for magnetic field distribution and magnetization vector of permanent magnets as in sensor applications.

MagCam NV of Leuven, Belgium, is a high-tech company offering the world's first magnetic field camera called MagCam One, a powerful measurement platform for live inspection of permanent magnets. This new concept, using technology knowledge of and developed in the labs of semiconductor company IMEC, is in this setup optimized for quality control of small magnets, both with uniaxial and multipole magnetizations, which are widely used for e.g. sensor applications.

This unique measurement instrument offers unprecedented characterization capabilities for various magnet and magnetic assembly properties. For uniaxial magnets the system measures the x,y,z-components of the magnetization vector and directly gives the deviation angle with respect to the geometrical symmetry axis. For multipole magnets an analysis is performed including pole height uniformity, high resolution pole/zero distance/angle measurements, magnetic asymmetries and more.

The MagCam technology is based on a high resolution and high speed quantitative 3D mapping of the magnetic field distribution, using a patented chip with an integrated 2D array of over 16,000 microscopic Hall sensors with 0.1mm resolution. A full resolution MagCam map of 13mm x 13mm is captured and already analyzed in less than 1 second. Inhomogeneities, such as magnetic or mechanical defects become readily visible in the MagCam magnetic field distribution map. Further data analysis by the MagCam software can yield e.g. statistical magnetic field characteristics and total flux.

The defined quality tolerances can be specified in the user software in order to get realtime magnet quality and pass/fail information. The MagCam results can be easily logged and integrated in your quality assurance reports.

Conclusion: The MagCam technology opens up a new dimension in sensor assembly development and magnet quality control.